P.O. TPDS

5 July 1961

MEMORANDUM FOR THE RECORD

SUBJECT: [redacted] 2:1 Reduction Printer Lens

1. On or about June 1960 a fixed price contract was let to [redacted] to produce a 2:1 reduction lens to take a format from 18" x 18" to 9" x 9" and to accept 200 lines per millimeter and exploit the resolution to 400 lines per millimeter across the format. This lens was to replace the [redacted] 2:1 reduction printer lens in the printer which, at its best, exploits 113 lines per millimeter on axis and drops off to 68 lines per millimeter on the corners.

2. At the time the contract was let, [redacted] was undergoing change of ownership from [redacted] Due to personnel and personality difficulties little work was performed on the design of the lens until [redacted] had taken over, about January 1961. Several attempts had been made to design such a lens and several more were tried until a modified grey design was attempted which proved to be feasible. This design was completed about May 1961. At this time, the company discovered that they would be in trouble financially if the contract was to continue and have requested relief.

3. The design calls for 14 elements ranging in diameter from 22" to 14" to construct on f/2.0 systems. Grinding time to be one man month per element. The size of the 2:1 lens to be 131 inches long and to weigh in the neighborhood of 1000 pounds. The lens will perform in either direction; i.e., 2:1 reduction or 2:1 enlarging. In addition, this lens is a family of lenses; i.e., by changing the seven elements on the small end a 1:1, 2:1, 3:1 or 4:1 lens is available.

4. It was determined by [redacted] after performing the design phase, that a 2:1 lens would cost [redacted] a 4:1 [redacted] or that the 2:1 would cost [redacted] and a 4:1 attachment would cost [redacted]

5. It was determined that the 2:1 lens would not fit the present [redacted] printer and that a different shutter arrangement other than that used by [redacted] would be necessary. Therefore, the following recommendations are made:

a. If the lens is built, that a lens bed be built by [redacted] to hold the lens and that a light source, magazine and shutter be built by them. Their price quote on this [redacted]

b. If the lens is built, that the contract be changed to an incentive contract with a fixed ceiling re negotiable downward. This is agreeable with [redacted] STATINTL

c. It is further recommended that the lens be manufactured if a need can be determined, since there is no lens in existence today that covers such large formats with the resolving characteristics that are claimed here. There are lenses available that cover a field of .45 inches that perform as well, but none that cover 18" x 18" or even 9" x 9" that carry 200 lines per millimeter across the field. For example, the [redacted] which carries 113 lines per millimeter on axis with the fall off to 70 lines per millimeter on the corners.

STATINTL

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[redacted]

STATINTL NPIC/TPDS:[redacted]:jem[redacted]

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Note: Meeting of 22 June Mr Lundahl, [redacted] 2 h was decided to place a stop work order on [redacted] until it was determined whether or not to proceed. Total STATINTL expenditure to date is [redacted]

STATINTL